

## ON A NEW GENUS AND SPECIES OF THE FAMILY STAPHYLINIDÆ.

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The enormous mass of minute *Staphylinidæ*, named collectively *Aleocharini*, consists of many hundred described (and probably nearly as many thousand undescribed) species, and forms one of the most specialized portions of the *Staphylinidæ*; by this, I mean a portion in which the points of structure distinctive of the family are most developed. The group of the *Staphylinidæ* called *Tachyporini* has been generally placed next to the *Aleocharini*; it is, however, much less developed or specialised than the *Aleocharini*, and its place is likely still to give rise to much discussion. I am myself disposed to guess that the *Aleocharini* are likely to prove a group which must be subjected to much decomposition or analysis before it can be properly dealt with, and that some portions of it will be found to be directly connected with (or descended from) the *Oxytelini*, and others from the *Tachyporini*. The insect I here describe is of considerable importance as throwing some light on this point.

The most decided characters by which the *Aleocharini* and *Tachyporini* are distinguished, are the structure of the elytra, and the insertion of the antennæ. In the *Tachyporini*, the elytra are furnished with a well marked and abruptly distinguished pleural portion; while in the *Aleocharini* this pleural portion is not to be found. The stages of its disappearance can be, it seems to me, clearly traced, for we have only to examine a selected series of *Tachyporini* to find this pleura becoming more and more inflexed, till, in *Hypocyptus* and *Vatesus*, we find it entirely and closely applied to the inner face of the body of the elytron; it has, in fact, become completely doubled in or folded down. M. Pandellé has already pointed out that this is the metamorphosis by which the difference in the elytron of *Hypocyptus* from other *Tachyporini* may be understood, and the *Vatesus latitans* seems to demonstrate this completely; for, while in *Hypocyptus* the outer line or boundary of the pleura has entirely disappeared, and only the inner one can be detected, in *Vatesus*, on the other hand, both lines exist. The disappearance of the inner line (which is the only one existing in *Hypocyptus*) would completely transform such an elytron into that of the *Aleocharini*.

As regards the second point by which the *Aleocharini* and *Tachyporini* are distinguished, viz., the insertion of the antennæ, *Vatesus* seems to occupy a peculiarly interesting position between the two

groups: in it, the head has undergone a peculiar change, by which the front half is bent down at right angles to the posterior half; now, if this bent-down front portion be supposed to be bent up so as to restore it to its natural plane, it will be seen that the point of insertion of the antennæ is that of the *Aleocharini*, or, perhaps I should rather say, of an ultra Aleocharineous Aleocharinid, for the point of insertion would then be correctly described as at the inner margin of the eye, but rather nearer to the back than to the front of the eye: if, on the other hand, we suppose this peculiar deflexed front portion of the head of *Vatesus*, together with the corresponding portion of the eye, to be greatly reduced in size, it is at once seen that the form of the head and the insertion of the antennæ would be exactly that of the ordinary *Tachyporini*.

I consider, then, that the *Vatesus latitans* here described cannot be correctly classed with either the *Aleocharini* or *Tachyporini*, but should be considered apart as a connecting link between the two. I may remark also that this insect appears to have some points of relation with certain peculiar *Quediini*; but this I have not fully investigated, and only mention it as rendering still more probable the hypothesis that *Vatesus* is in many respects a very primitive form or synthetic type.

On one other point, I will venture to offer a suggestion. When this insect is carefully examined, it is seen that its points of structure are such as to unfit it for much activity, but to afford it great protection in complete quiescence; thus the segments of the hind body are completely retractile, and when so retracted, leave scarcely any portion of this part exposed, except the ventral plate of the basal segment, and this is protected by peculiar rigid spines. The extremely small head is capable of being completely inflexed, and the sensitive front parts of it are then completely protected by the huge front coxæ; and I believe that the peculiar change of form of the front parts of the upper surface of the head will, on careful examination, be found to be merely a perfecting of this applicability. The legs are so formed that their parts are beautifully adapted to one another when flexed or contracted, the articulations being then completely protected, while the large flat femora completely cover and protect the breast. We can imagine, then, a small parasite seeking in vain to find a chink by which to gain access to the soft and nutritious parts of our *Vatesus*. Now, I am strongly inclined to consider that in a great many *Coleoptera*, and probably in other insects, it will be found that a vast number of

points of structure are directly related to the preservation of the creature from small parasites. We have here an extensive field in which "natural selection" may be suppose to operate in the most direct manner. Finally, I would add, that I think it will very likely be found that insects which are greatly modified for a very protected or quiescent life of this sort, are remarkably often primitive forms. The most beautiful instance of complete protection of the sort with which I am myself acquainted, is to be found in the "kugelförmige," or rolling-up, *Trogidæ*.

### VATESUS, *n. gen.*

Head extremely small in proportion to the prothorax, its vertical part forming a plane at right angles to the plane of the clypeal portion, so that when the head is extended, the vertical plane is horizontal and the clypeal one perpendicular; this perpendicular portion is to a great extent occupied by two large depressions in which are the cavities for the insertion of the antennæ; the space separating these two large cavities is somewhat prolonged in front, is transversely convex, and to its front margin is attached the large labrum: the eyes are very peculiar in form; when looked at from the front, each eye appears as a perpendicular external wall to the large antennal cavity, while, seen from the side, each eye presents a considerable superficies looking outwards; when looked at from the front, it is seen that the round articular cavity for the insertion of the antenna is nearer to the top than to the inferior boundary of the perpendicular portion of the eye.

Maxillary palpi elongate, first joint short, second curved and elongate, third slightly longer than second and scarcely more slender than it, fourth elongate and slender, but considerable shorter than third, and scarcely half so stout as it, quite acuminate. Pronotum forming a very convex surface, the hind margin of which is sinuate on each side, the hind angles greatly rounded, the sides finely margined, curved, and extremely narrowed towards the front; the front margin is very small in proportion to the others, and forms an arch for the accommodation of the head, the front angles being extremely obtuse.

Looking at the under-surface, the sides of the pronotum extend greatly beyond the prosternum, so that the front legs, when contracted, are entirely concealed; the prosternum is but a narrow band, placed quite in front of the coxæ, and leaving them completely exposed; the coxæ are very large and inflated, and the head can be deflexed, and applied closely to the small portion of the thorax that is in front of and between them: the front femora are short, broad, and plate-like, their lower edge being deeply channelled for the reception of the tibiæ, the channel extending to the point of the trochanter; the front tibiæ are short, compressed, and are rather attenuate towards the apex, their hinder face is armed with stout spines, and their apex possesses several long spines, which greatly conceal the upper face of the front tarsi; these are five-jointed, and in the male are rather broad, but the basal joints can scarcely be said to be dilated, as they are not much broader than the terminal joint, they are clothed beneath with long hairs, the fifth joint is broad and longer than the two preceding ones together. The mesosternum forms a transverse band,

which sends forward in the middle an elongate, extremely slender process between the middle coxæ to meet the metasternum. Middle coxæ very large. Metasternum greatly reduced, not so large as the hind coxæ. Hind coxæ very large (similar in structure to what obtains in the convex South American species of *Coproporus*, e. g., *C. obesus*, Sharp). Middle femora broad and laminar, their hinder edge deeply channelled for the reception of the tibiæ: these are stout, rather attenuate towards the extremity, strongly spinulose; the tarsi are broad, and appear like a continuation of the tibiæ, the basal joint is particularly large, and is as long as the three following together, the fifth joint is stout and flat. Hind femora, tibiæ, and tarsi, much resembling the middle ones, but more slender and rather more elongate. Elytra (seen from above) very arched transversely, the humeral angles greatly rounded, the upper superficies bounded by a fine line which extends from the hinder outer angle to near the large scutellum; the hinder external angle is a little produced, so as to be acute, their suture is fine and accurately fitted, and is without stria. Seen from beneath, the external portions of the elytra project greatly as a broad free border beyond the sternum, this border is marked off by a very distinct raised line, which exists on the inner face of the elytron, and accurately adapts itself to the side margins of the sternum. Hind-body broad and short, much attenuated towards the extremity, the sides distinctly margined, the segments capable of being almost entirely retracted within one another: its structure very similar to that of the convex *Copropori*, this being the case also with the cœdeagus and its sheathing segment. The antennæ are not described, because only the two basal joints exist, these are rather short, the basal joint being rather thick in proportion to its length.

#### VATESUS LATITANS, *n. sp.*

*Transversim perconvexus, capite thorace elytrisque nigris, nitidis, fere lavigatis; abdomine piceo, fere opaco, crebre punctato, densius subtiliter pubescente.*

*Long. corp. extens. 8½ mm.*

Head about 1 mm. broad, black, impunctate. Thorax about 3½ mm., broad, and about 2 in length, with a few very indistinct punctures scattered over its surface. Scutellum impunctate. Elytra about as long as the thorax, impunctate, moderately shining, their hind margin pitchy. Hind-body pitchy, with the hind-margins of the segments and the apex paler; the segments above finely, very evenly and rather closely punctured, and clothed with a very short and even yellow pubescence: the under surface similar to the upper, except that it has the basal segment coarsely punctured, and its pubescence is developed into coarse spines. Legs pitchy. In the male, the dorsal plate of the 7th segment of the hind body ends in four obtuse teeth, the ventral plate has a broad and rather deep sub-angular notch at the apex; the hind margin of the ventral plate of the preceding segment is a little trisinnate, and it is slightly depressed along the middle, and its pubescence arranged so as to give it an obsolete grooved appearance.

Female unknown.

Parana, South America; a single mutilated male specimen.

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